



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s): Gary L. Bush

Title: NUCLEAR RESONANCE APPLICATIONS FOR ENHANCED COMBUSTION

Serial No.: 10/817,539 Filing Date: April 2, 2004

Examiner: S. Suereth Group Art Unit: 3749

Docket No.: GLB002

Austin, Texas
May 23, 2006

COMMISSIONER FOR PATENTS
Mail Stop Amendment
P.O. Box 1450
Arlington, VA 22313-1450

RESPONSE TO ELECTION REQUIREMENT

Dear Sir:

This paper is responsive to the Office Action dated April 27, 2006, having a shortened statutory period expiring May 27, 2006. No extension of time is believed to be required to respond to the Action; however, in the event any extension of time is required, please consider that extension requested and please charge any associated fee, and any additional required fees, to deposit account number 50-2053. Further examination and reconsideration are respectfully requested in view of the remarks set forth below.

The Office Action sets forth an election requirement between three species of the present invention, namely, using nuclear resonance stimulation (i) before a gas reaches the combustion chamber, (ii) while the gas is inside the combustion chamber, and (iii) after the gas has been combusted. Applicant would first respectfully note that the invention is not limited to only a gas, as the specification explains that the fuel may be composed other combustible materials including liquids, and the claims refer generally to a "combustible material." Applicant also wishes to clarify the nature of the election requirement as being directed to the timing of the nuclear stimulation relative to the combustion reaction, and not to the location *per se*. The

language of the election requirement uses the temporal terms “before,” “while” and “after.” However, the first two identified species also are described spatially relative to “the combustion chamber” but the last species is not so described. Applicant would submit that it is the timing of the stimulation that is of primary interest, not the location. For example, a fuel/air mixture might be introduced into the combustion chamber and stimulated prior to ignition of the material. Similarly, the by-product of the combustion reaction might be stimulated while still inside the combustion chamber. As noted at page 6, lines 16-17 of Applicant’s specification, “Stimulation of the components can occur before, during, or after the combustion reaction in the combustion area.”

Applicant respectfully traverses the election requirement since there currently are allowable generic claims. Independent Claims 1, 27 and 54 are generic since they are not limited to the particular timing of the nuclear resonance stimulation with respect to the combustion chamber. Nothing in the specific language of those claims recites the relative timing or location of the nuclear resonance stimulation. Furthermore, Claims 1 and 27 have three separate dependent claims to cover these three stimulation activities. Claims 4, 5 and 6 are respectively directed to post-combustion activity, concurrent combustion activity, and pre-combustion activity, and depend from Claim 1 which pertains to a method of carrying out a combustion process. Claims 30, 31 and 32 are respectively directed to post-combustion activity, concurrent combustion activity, and pre-combustion activity, and depend from Claim 27 which pertains to a combustion apparatus. Claim 54 pertains to a feedback control unit which may be used in any of the three implementations. The following claims depending from independent Claims 1, 27 and 54 are also generic: 2-3, 8-14, 28-29, 34-41, 55-60. Claims 7 and 33 are a combination of two of the ostensible species, reciting NMR in the intake of the combustion chamber (pre-combustion activity) and NQR in the combustion chamber (concurrent combustion activity).

Subject to the foregoing, Applicant provisionally elects the first species identified in the Office Action, viz., using nuclear resonance stimulation before the combustible material reaches the combustion chamber. This election corresponds to Claims 1-3, 6-18, 27-29, 32-45 and 54-60 (Claims 6-7, 15-18, 32-33, and 42-45 are specific to the pre-combustion activity species and, pursuant to MPEP §809, Claims 1-3, 8-18, 27-29, 34-41 and 54-60 are genus claims which constitute “linking claims” that are considered part of the elected invention).

Applicant has made a diligent effort to advance the prosecution of this application by making a provisional election and pointing out with specificity how generic claims are present. In view of the remarks set forth herein, the application is believed to be in condition for allowance and a notice to that effect is solicited. Nonetheless, should any issues remain that might be subject to resolution through a telephonic interview, the examiner is requested to telephone the undersigned.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, Mail Stop Amendment, P.O. Box 1450, Arlington, VA 22313-1450, on May 23, 2006.


Attorney for Applicant(s)

May 23, 2006
Date of Signature

Respectfully submitted,



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